

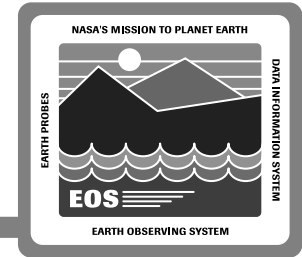
Management Subsystem

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**ECS Release A SDPS/CSMS Critical Design Review
15 August 1995**

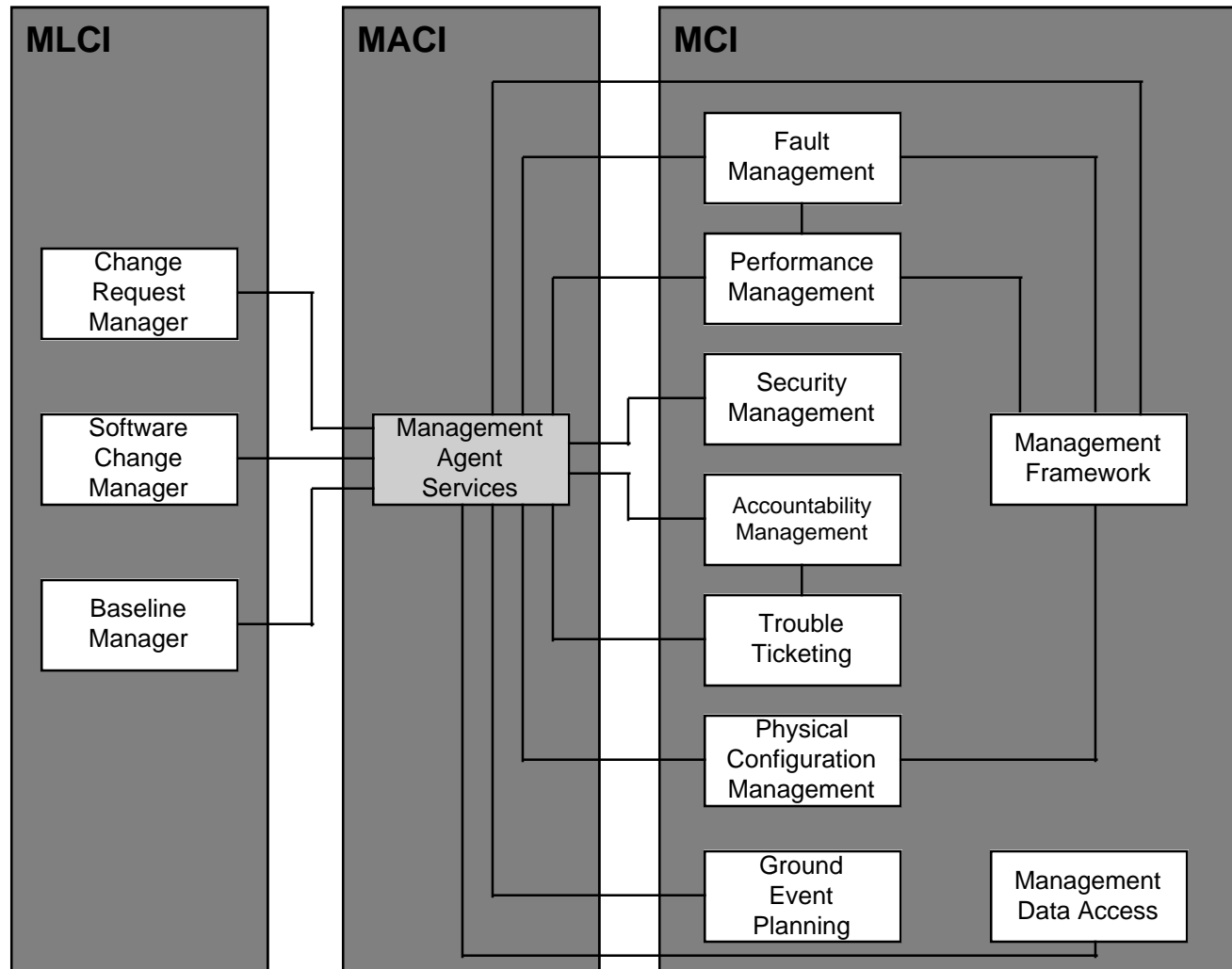
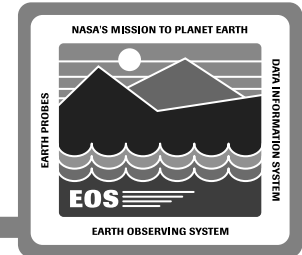
Management Services Subsystem



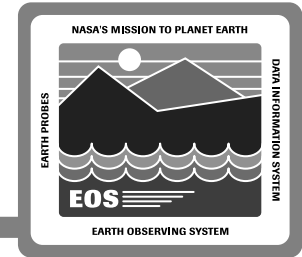
MSS Design Drivers

- No single point of failure
- DAAC autonomous management of resources
- SMC provided monitoring and coordination view of DAACs
- Policy neutral implementation
- Remote monitoring and limited remote management of DAAC resources
- Scalable and evolvable solutions

Release A MSS Context



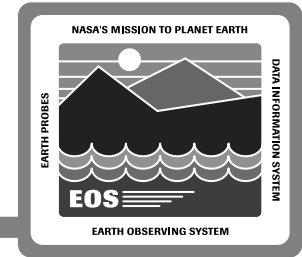
MSS Implementation



Applications Monitoring and Management

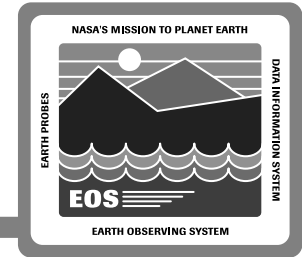
- **Two methods implemented by MSS**
 - **Non-intrusive monitoring**
 - Monitoring role only**
 - Collects information “about” managed object**
 - Based on Host MIB and scripted UNIX commands**
 - **Intrusive monitoring (instrumentation)**
 - Collects information “from” managed object**
 - Relies on instrumentation of custom applications**
 - Relies on Proxy Agent for COTS applications**
 - Supports both monitoring and management of objects**
 - Relies on “extended” MIB for each management application**

MSS Implementation (Cont)



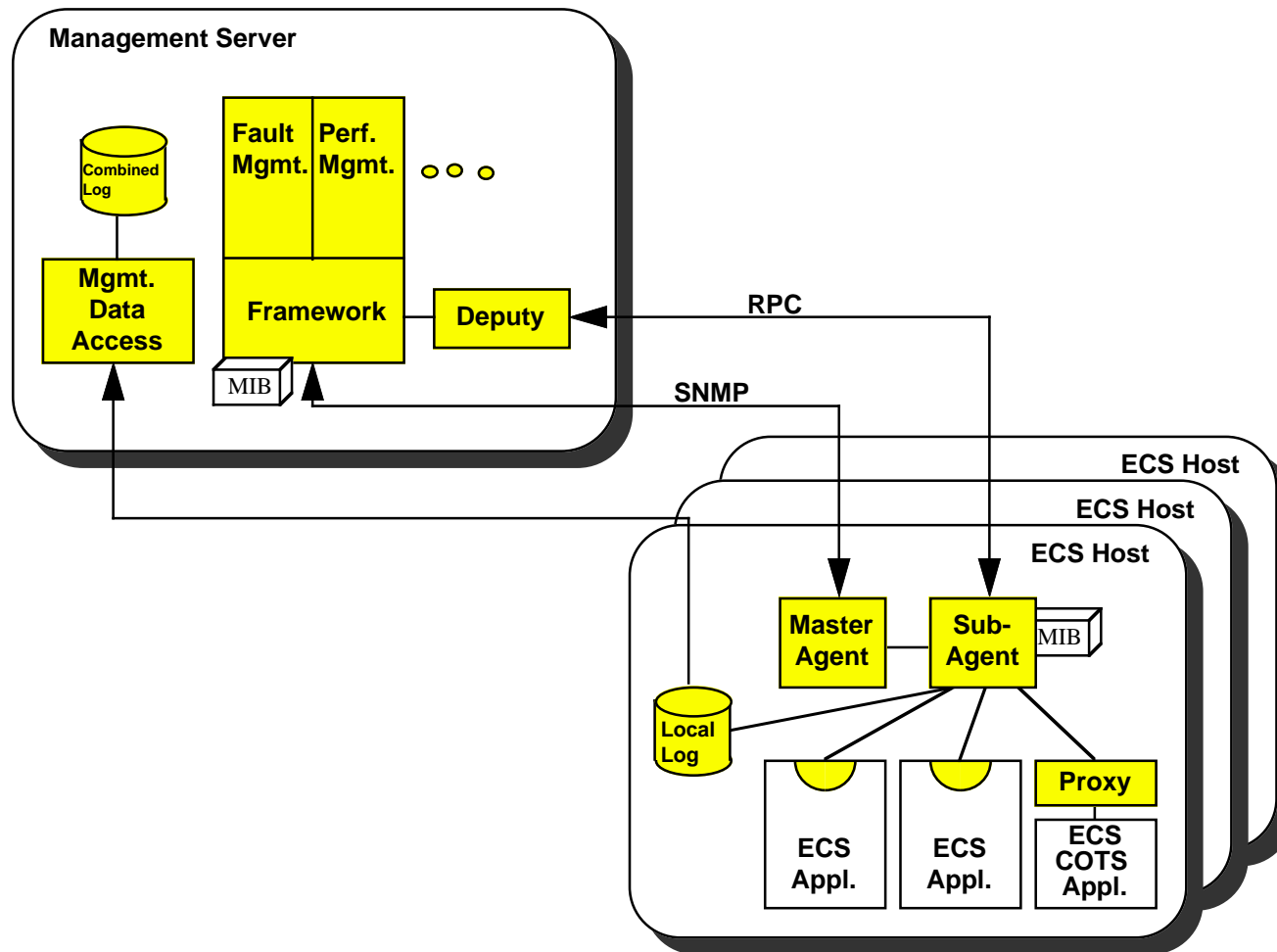
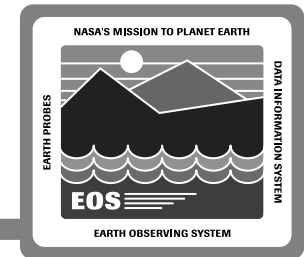
- **Provides full lifecycle services**
 - **Application startup and shutdown**
 - **Common error, fault, and performance reporting**
 - **Event reporting for audit trails**
 - **Interface for status updates**
 - **Extensible to support additional applications**
- **Built around “intelligent” agent concept**
 - **Moves functionality to agent on each host computer**
 - **Filters event reporting to minimize network traffic**
 - **Provides “discovery” of ECS applications**
 - **Provides controlling interface for applications**

MSS Implementation (Cont)

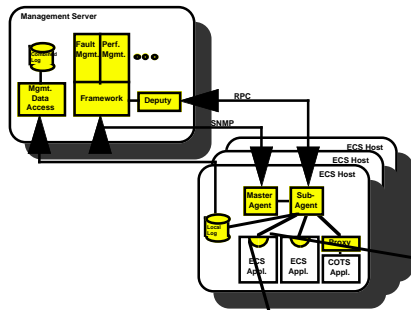


- **Overcomes SNMP V1 shortcomings**
 - **RPCs used for communication between hosts and MSS Server**
 - **SNMP used only for “get” operations**
 - **RPCs used for all “set” operations for security**
 - **Network components utilizes out-of-band for “set” operations**

MSS Infrastructure



Application Instrumentation



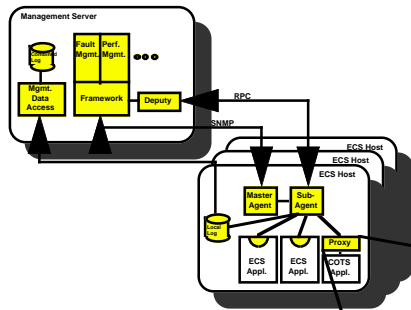
MSS Class Libraries Provide:

- Communication to SubAgent for
- Responses to Management Requests
- Event Reporting/Logging
- User Profile Lookup
- Resource Status Lookup

ECS Applications Provide:

- Functions for
 - Implementing Lifecycle Services
 - Startup
 - Shutdown
 - Generating Responses to Management Requests
 - Performance Data
 - Error/Fault Data
- Notifications of Events
 - Accountability Events
 - Fault Events
 - Performance Events
 - Security Events

Proxy Agent for COTS



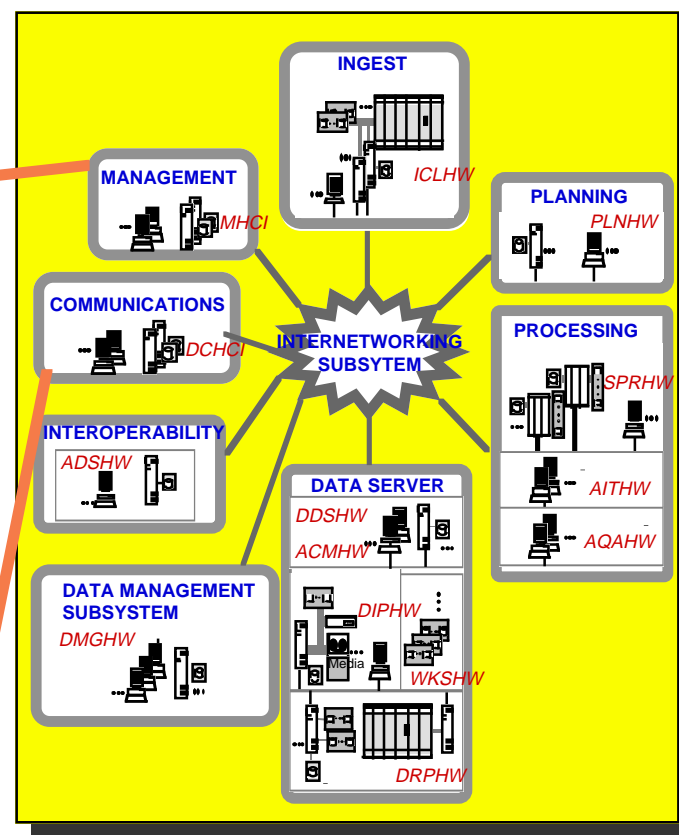
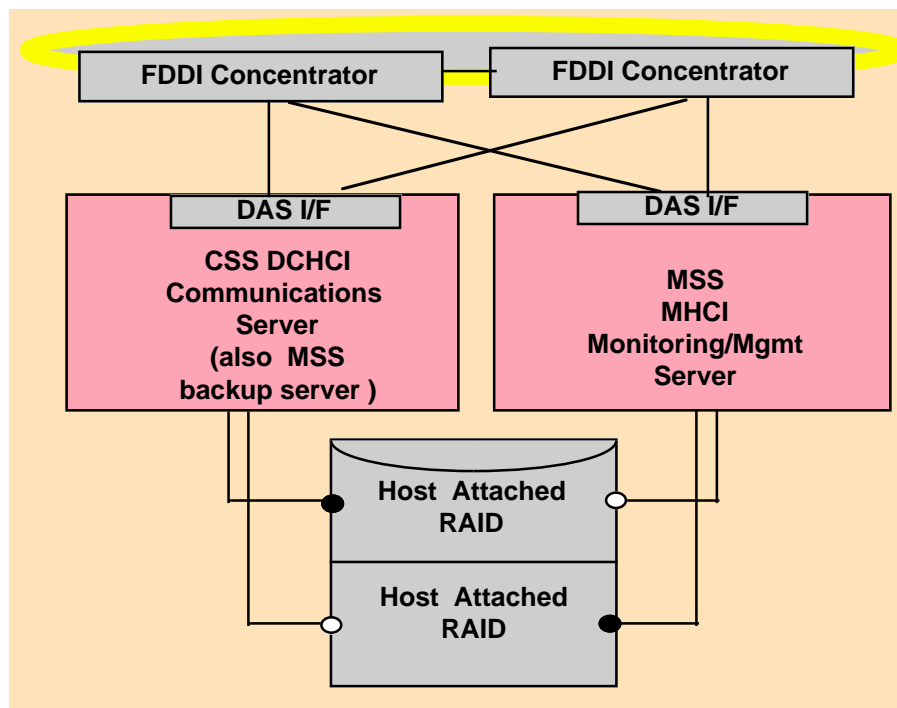
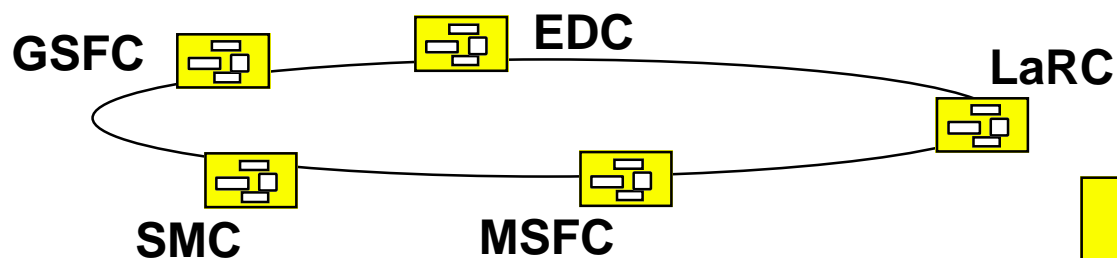
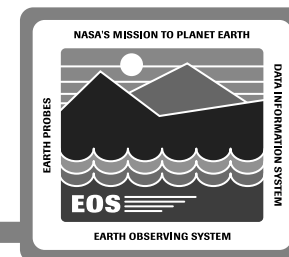
MSS Class Libraries Provide:

- Communication to SubAgent for
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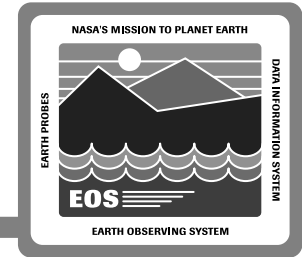
ECS COTS Applications Provide:

- Functions for
 - Implementing Lifecycle Services
 - Startup
 - Shutdown
 - Generating Responses to Management Requests (via COTS APIs)
 - Performance Data
 - Error/Fault Data
 - Notifications of Events (via COTS APIs)
 - Accountability Events
 - Fault Events
 - Performance Events
 - Security Events

MSS Hardware Architecture



Summary



- **State-of-art solution for Release A management**
- **Standards-based (consortia and committee)**
- **Common management protocol for both hardware and software**
- **MSS public classes insulate ECS applications from changes in underlying management protocol**
- **Simple yet robust management solution**
- **Complete toolset for managing all ECS hardware, applications, and services**
- **Selective look-ahead to Release B**